

**DEPARTMENT OF HEALTH & HUMAN SERVICES
PUBLIC HEALTH SERVICE
INDIAN HEALTH SERVICE**

**TUCSON AREA
7900 SOUTH J. STOCK ROAD
TUCSON, ARIZONA 85746**

FY 1997 ENERGY REPORT

October 1997

**DEPARTMENT OF HEALTH & HUMAN SERVICES
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INTRODUCTION

This report pertains to the facilities in the Tucson Program Area, Indian Health Service. The facilities covered in this report include the Sells Indian Hospital, San Xavier Clinic, Santa Rosa Clinic, Pisinemo Health Station, and Casa Grande Western District Office (leased).

A. ANNUAL ENERGY MANAGEMENT DATA REPORT

- I. Energy Consumption and Cost Data:** See Appendix A.
- II. Energy Conservation Program Summary:** See Appendix B.

B. ENERGY CONSUMPTION REDUCTION GOALS

The Tucson Program Area goals for energy conservation are as follows, calculated on the base year FY 1985:

1995	10% reduction
2000	20% reduction
2005	30% reduction

The energy conservation program at the Tucson Program Area is described in facilities policy number FMB 5.1, Energy Management/Conservation. This policy calls for monitoring of energy consumption, evaluation and analysis of trends, and measurement against energy reduction goals. Management is kept informed of the status of energy use and conservation.

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B. ENERGY CONSUMPTION REDUCTION GOALS - continued

For new construction, renovation, or repair of equipment and structures, the use of energy is a consideration. The use of automatic equipment such as night setback thermostats is encouraged. Replacement equipment is sought which has a high efficiency ratio (SEER). When facilities are renovated, the use of energy during normal operations is considered, and appropriate insulation and ventilation rates are used. The facilities are evaluated periodically for energy conservation opportunities.

Each facility has individuals trained in recognizing energy-saving opportunities. A reminder checklist is included in the facilities policy.

C. ENERGY SAVINGS PERFORMANCE CONTRACTS: No information to report.

D. ENERGY EFFICIENCY AND WATER CONSERVATION PROJECT FUNDING:

Funding for energy management and conservation comes from the M&I Operational and Projects funds, and from the Energy Surveys and Projects fund. The amounts of FY97 funding available in each account:

M&I Operations	\$447,000
M&I Projects	\$263,000
Energy Surveys & Projects	\$ 67,000

The only funds specifically designated for energy projects are from the Energy Surveys & Projects fund. The M&I Operations fund is for repair parts, repairs, maintenance, and small contract jobs. The M&I Projects fund is for any other projects requested. Due to the depreciating infrastructure in buildings, equipment, paving, fences, and utilities, the projects fund is underfunded to meet the requirements.

E. ENERGY AND WATER SURVEYS AND AUDITS:

- I. PRIORITIZATION SURVEY:** The initial energy management surveys were conducted in the Tucson Area in 1982. Since that time, Deep Look surveys were conducted in 1986 and 1993, and a portion of each Deep Look survey involved energy management. In addition, an Energy Study was conducted for the Sells Hospital in 1991.

E. ENERGY AND WATER SURVEYS AND AUDITS:

I. PRIORITIZATION SURVEY - continued

The 1982 survey of San Xavier and Santa Rosa states that the two facilities were operated in an energy efficient manner and that "Energy saving retrofit projects are not cost effective when applied to energy efficient facilities." Even so, the report states that some mechanical renovations and automatic controls would save energy. Further, the report states that the use of the incinerator and exercise of the generator at Santa Rosa represents 20% of the energy use at Santa Rosa: both of these energy users have been discontinued.

The 1982 survey of Sells states that the compound exceeds the Department of Energy goals by 13.5%. It also says that architectural renovations would not produce sufficient savings to justify the expenditure. The report recommends some mechanical renovations to save energy, and also the installation of gas meters to identify major users of LPG. Since that time, the quarters have been removed from the central LPG system and have individual metered LPG tanks for each quarters building. The LPG system serving the hospital has been replaced.

The major findings of the 1991 Sells study recommended replacement of some equipment, reviewing equipment sizing to optimize efficiency, reviewing design parameters on outside air quantities to reduce HVAC energy requirements, and making some operational changes to reduce energy use.

The initial surveys have been conducted. However, two major mechanical renovation projects at Sells and San Xavier may have changed conditions enough that the surveys need to be analyzed to determine if the points are still valid.

II. COMPREHENSIVE FACILITY AUDIT: These audits are yet to be conducted. The guidelines and scope for conducting these audits have not yet been written. The audits will be conducted by Architect/Engineer contractors. The transfer of functions from IHS Engineering Services to the Area will delay the audits.

III. LEASED FACILITIES: Of the square footage utilized by IHS personnel in the Tucson Program Area, 1% is leased. Since all utilities are paid by the leasor, no audits or projects are planned for those facilities.

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F. IMPLEMENTATION OF ENERGY EFFICIENCY AND WATER CONSERVATION PROJECTS: No information to report.

G. SOLAR AND OTHER RENEWABLE ENERGY: No information to report.

H. MINIMIZATION OF PETROLEUM-BASED FUEL USE: The major fuels used at San Xavier are natural gas and electricity; the electricity is provided from coal-fired power plants. The major fuels used at Sells are LPG and electricity. The major power source at Santa Rosa is electricity. The major fuels at Pisinemo Health Station are LPG and electricity.

I. ENERGY EFFICIENT OPERATIONS AND MAINTENANCE PROCEDURES: Thermostats and controls are being replaced with automatic time-setback models to conserve energy where feasible; the use of motion detectors in some rooms (such as conference rooms) has been investigated and partially implemented. Water-saving valves are replacing less efficient ones as the older ones wear out. As equipment is replaced, more energy efficient replacements are specified. The use of outdoor air is used for free cooling when the air temperature allows and when the ventilation requirements for healthcare spaces are not violated. As lighting is replaced, more efficient lamps and ballasts are specified.

J. ENERGY EFFICIENCY IN NEW SPACE: No information to report.

K. PERFORMANCE EVALUATIONS: No information to report.

L. INCENTIVE AWARDS: No incentive programs are known to exist other than the normal employee performance awards. No awards have been given or received within the facilities branch regarding energy conservation.

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M. PROCUREMENT OF ENERGY EFFICIENT PRODUCTS: The statements of work written to replace existing equipment and products include statements that all new products must meet appropriate energy efficiency requirements. This includes minor parts - such as lamps for lights - and major energy consumers, such as air conditioners and hot water heaters.

N. ENERGY MANAGEMENT TRAINING: The Tucson Area has two trained energy managers; both have attended the IHS Energy Management Training course conducted by IHS headquarters staff. One new facilities engineer will attend energy management training when the training is available at a convenient time.

O. ENVIRONMENTAL BENEFITS OF ENERGY MANAGEMENT ACTIVITIES:
No information to report.

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APPENDIX A

ENERGY CONSUMPTION AND COST DATA

IHS AREA: Tucson Area REPORTED YEAR: 1997
PREPARED BY: Roger Carmichael TITLE: Area Facil Engr
PHONE NUMBER: 520-295-2580 DATE SUBMITTED: 10/30/97

BUILDINGS/FACILITIES

<u>Energy Type</u>	<u>Reporting Units</u>	<u>Annual Consumption</u>	<u>Annual Cost (thous. \$)</u>	<u>Unit Cost</u>	<u>Total BTU</u>
Electricity	KWH	2,774,007	\$229.5	\$0.083/KWH	9,473 x 10 ⁶
Fuel Oil	Gal x 10 ³	0	0	-- / Gal	0
Natural Gas	CF x 10 ³	6,000	\$ 4.4	\$0.73 / ccf	6.9 x 10 ⁶
LPG/propane	Gal x 10 ³	46.656	\$ 47.3	\$1.01 / Gal	1,913 x 10 ⁶
Coal	Ton	0	0	-- / Ton	0
Purch Steam	MMBTU	0	0	-- /MMBTU	0
Other	MMBTU	0	0	-- /MMBTU	0
TOTALS	-----	-----	\$281.1	-----	11,393 x 10 ⁶

<u>Gross Square Feet</u>	<u>BTU/Gross Square Feet</u>	<u>\$/Gross Square Feet</u>
<u>142,459</u>	<u>79.974</u>	<u>\$1.97/gsf</u>

Vehicles/Equipment: Energy consumption reported through GSA, since all vehicles are from GSA.

R. Carmichael
Area Facilities Engineer

OCT 30 1997
Date

Rod Gardner
Area Associate Dir, OEHE

10-30-97
Date

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APPENDIX B

ENERGY CONSERVATION PROGRAM SUMMARY

IHS AREA: Tucson Area

REPORTED YEAR: 1997

PREPARED BY: Roger Carmichael

TITLE: Area Facilities Engineer

PHONE NUMBER: 520-295-2580

DATE SUBMITTED: 10/30/97

DIRECT AGENCY EXPENDITURES

Direct Expenditures on Facility Energy Efficiency Improvements

	Current Fiscal Year	Next Fiscal Year
Annual Expenditures (Thous. \$)	\$83.4	\$74.0
Annual Savings Anticipated from Expenditures	<u>1.0</u> MBTU	<u>\$1.2</u> (Thous. \$)

ENERGY SAVINGS PERFORMANCE CONTRACTS

Number of ESP Contracts Awarded 0

Annual Savings Anticipated From ESP Contracts 0 MMBTU 0 (Thous. \$)

UTILITY INCENTIVES

Incentives Received 0 (Thous. \$)


Funds Spent to Receive Incentives 0 (Thous. \$)

Annual Savings Anticipated from DSM Activities 0 MMBTU 0 (Thous. \$)


TRAINING

Current Year Expenditures for Energy Management Training 0 (Thous. \$)

Number of Personnel Trained 2


Area Facilities Engineer

OCT 30 1997
Date


Area Associate Dir, OEHE

10-30-97
Date